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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

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TITLE OF THE INVENTION		
BATON HANDLE		
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<input type="checkbox"/> Applicant claims small entity status. <input checked="" type="checkbox"/> A check is enclosed to cover the filing fee for a LARGE ENTITY = \$ 160 <input type="checkbox"/> A check is enclosed to cover the filing fee for a SMALL ENTITY = \$ 80 <input checked="" type="checkbox"/> If no or an insufficient check is enclosed and a fee is due in connection herewith, the Commissioner is authorized to charge any fee or additional fee due in connection herewith to Deposit Account No. 12-0555.		
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.		
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Respectfully submitted,

Date: 4/10/03

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BATON HANDLE

FIELD OF THE INVENTION

5 The present invention provides a handle, and method for attaching the handle to a flashlight to form a baton, the handle being specially adapted to enable operation of the flashlight after attachment.

10 BACKGROUND TO THE INVENTION

Batons and flashlights are widely used by police officers and security guards. Flashlights can be desirably incorporated into batons thereby removing the need for 15 such personnel to carry both a baton and a flashlight. There are many proposals in the prior art directed toward combining flashlights with baton like security sticks.

US 4,739,990 discloses a self-defence/attack 20 device adapted to contain a flashlight and a side handle projection to hold the device, however, it is not a baton *per se* owing to its relatively small size. Similarly, the security stick of US 3,737,649 can not be considered a baton due to the absence of a handle. Neither of these 25 devices are compatible for use with existing flashlights.

Other security sticks provide flashlights as well as additional security features including audible alarms (US 2,908,901), guns (US 2,625,764), and electric shock 30 generators (US 4,486,807). Such devices are specially manufactured and are not compatible for use with existing flashlights.

US 2,257,227 discloses a baton with a flashlight 35 at one end wherein a groove is provided near the handle to operate the flashlight switch. This arrangement is not well adapted for single-hand operation of both the baton

and flashlight.

The combination baton and flashlight disclosed in US 4,479,171 does support single-handed operation by 5 including a switch at the top end of the handle for activating the flashlight. Such a combination is also not compatible for use with existing flashlights.

There is a need for a handle which can be 10 attached to an existing flashlight to form a baton.

SUMMARY OF THE INVENTION

According to one aspect of the present invention, 15 there is provided a handle for attaching to a flashlight to form a baton, the flashlight being of the type having a switch for activating the flashlight light, said handle having:

a handle body;
20 attachment means for attaching said handle body to a flashlight; and

an actuator fitted to said handle body, wherein when said handle body is attached to said flashlight such that said actuator is positioned in register with said 25 switch, actuation of said actuator will actuate said switch.

The invention is particularly adapted to actuating switches of the press-button type by said 30 actuator pressing said press-button.

Preferably, said actuator is contained within said handle body.

35 Preferably, said actuator returns to a standby configuration after said actuator presses said press-button switch.

Even more preferably, said actuator includes a spring.

5 Preferably, said actuator includes an actuator rod that can be positioned directly over said press-button switch when said handle body is attached to said flashlight.

10 Preferably, said attachment means is provided by a clamping collar.

15 Even more preferably, said collar has a switch access hole such that a user can access the flashlight press-button switch with a finger when the switch access hole is coincident with the press-button switch.

In another aspect, there is provided a baton having:

20 a flashlight having a switch for activating the flashlight; and

25 a detachable handle attached to said flashlight to form a baton, said handle having a handle body, attachment means for attaching said handle body to a flashlight and an actuator fitted to said handle body, wherein when said handle body is attached to said flashlight such that said actuator is positioned in register with said switch, actuation of said actuator will actuate said switch.

30 In another aspect, there is provided a kit having:

a flashlight having a switch for activating the flashlight; and

35 a handle for attaching to said flashlight to form a baton, said handle having a handle body, attachment means for attaching said handle body to a flashlight and

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an actuator fitted to said handle body, wherein when said handle body is attached to said flashlight such that said actuator is positioned in register with said switch, actuation of said actuator will actuate said switch.

5

According to a further aspect of the present invention, there is provided a method for forming a baton from a flashlight and a handle; the flashlight having a switch for activating the flashlight light; said handle 10 having a handle body, attachment means for attaching said handle body to a flashlight, and an actuator fitted to said handle body; said method involving:

attaching said handle body to said flashlight using said attachment means such that said actuator is 15 positioned in register with said switch, wherein actuation of said actuator will actuate said switch.

BRIEF DESCRIPTION OF THE DRAWINGS

20 A preferred embodiment of the invention will now be described in relation to the accompanying drawings in which:

FIGURE 1 shows a partially sectioned view of a baton formed by attaching a handle to a conventional 25 security flashlight according to an embodiment of the present invention;

FIGURES 2a-2e show single-handed operation of a baton;

FIGURE 3 shows a plan view of a baton handle 30 according to an embodiment of the present invention;

FIGURE 4 shows a sectioned side view of a baton handle according to an embodiment of the present invention; and

FIGURE 5 shows a sectioned front view of a baton 35 handle according to an embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Batons are t-shaped devices comprising a stick with an orthogonally attached handle. A conventional 5 security flashlight 8, also often referred to as a torch, can be modified by securely attaching a handle 10 in accordance with a preferred embodiment of the present invention to form a baton 6. This general configuration is shown in Figure 1. Security flashlights suitable for this 10 application include those marketed under the name MAG-LITE having a press-button switch 2. (MAG-LITE is a trade mark of Mag Instruments of Ontario, California, USA) Press-button switches are also often referred to as push-button or toggle switches.

15

According to one embodiment of the present invention, an actuator having an actuator rod 12 is fitted to a handle body 20 and has an end portion 13 which protrudes from the free end of the handle 10. When the 20 handle is attached to a flashlight, with the actuator rod 12 in register with the press-button of the flashlight 8, a user 4 can press the end portion 13 of the actuator rod with a thumb whilst gripping the handle 10. Some examples 25 of how the baton 6 may be manipulated by the user 4 during single-handed operation are shown in Figures 2a-e.

The handle 10 is attached to the flashlight 8 with an attachment means. Attaching the handle 10 such that it coincides with the flashlight's press-button 30 switch 2 gives the overall baton 6 good balance for operational use as shown in Figure 2. The handle 10 and/or attachment means must however be adapted to facilitate operation of the press-button switch 2.

35

An example of a handle 10 in accordance with a preferred embodiment of the present invention is shown in Figures 3-5. The handle has a handle body 20, an

attachment means in the form of a clamping collar 14 for attaching the handle body to the flashlight 8, and an actuator fitted to the interior of the handle body.

5 The handle body 20 constitutes a generally cylindrical shape, with a hollow central cavity 25 in which the actuator is fitted. The handle body 20 is adapted to fit the hand comfortably by having a curved outer surface 24. A flanged free end 26 minimises the
10 likelihood of the baton slipping from the user's grasp during operation. The handle body 20 can be made from any suitable material such as a hardened plastic, fibreglass, a moulded alloy or steel.

15 The clamping collar 14 is firmly attached to the attaching end of the handle body 20. The effective inner diameter of the collar 28 is adjustable to ensure a firm fit when the handle 10 is attached to the flashlight 8. The collar 14 has two free ends 36 which can be
20 temporarily widened by the user 4 so as to permit the flashlight 8 to be placed within the collar 14 and manipulated into the required position before clamping.

25 The collar 14 further has a raised lip 34 at each free end 36, each lip having two lip holes 32 which are superimposed when the free ends 36 are brought together. Two bolts are inserted into the lip holes 32, each bolt passing through both lips 34, and nuts are tightened on the tail of each bolt. Tightening the two nut and bolt
30 pairs brings the free ends 36 of the collar 14 closer together, thereby clamping the flashlight 8 within the collar 14. A screw and threaded hole combination can be used as an alternative to the nut and bolt arrangement. When the flashlight 8 is clamped within the collar 14, the
35 handle body 20 protrudes from the flashlight 8 at a right angle and cannot rotate about its longitudinal axis.

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As previously mentioned, the actuator is fitted within a hollow central cavity 25 of the handle body 20. The actuator includes an actuator rod 12, compression spring 22 and plunger 38. The actuator rod 12 runs along the length of the handle body 20, passing through the hollow central cavity 25 of the handle body 20, terminating with a plunger 38 at the attaching end of the handle 10. The plunger 38 is positioned directly over the press-button switch 2 of the flashlight 8 when the handle body 20 is fastened securely to the flashlight 8.

There is provided a pair of actuator rod locaters 40, 42 for centralising the lateral position of the actuator rod within the hollow central cavity 25. The diameter of the actuator rod 12 is marginally smaller than the inner diameter of the actuator rod locaters 40, 42 such that the rod can longitudinally slide in and out of the handle body 20 as required. The actuator rod 12 is able to rotate about its longitudinal axis.

20

An endstop bush 44 is fitted securely to the actuator rod 12, in a fixed position, so that the actuator rod 12 slightly protrudes from the free end of the handle body 20, and a small gap is present between the plunger 38 and the press-button switch 2 of the flashlight 8 when the actuator is in its standby configuration. A compression spring 22 placed in the hollow central cavity 25 of the handle body 20 can be used to abut the endstop bush 44 and the actuator rod locator closest to the flashlight 42, so as to maintain the actuator's standby configuration. The press-button switch 2 is not pressed when the actuator is in its standby configuration.

When force is longitudinally applied toward the flashlight 8 by a user pressing the end of portion 13 of the actuator rod 12, the compression spring 22 further compresses such that the plunger 38 presses down on the

flashlight press-button switch 2 directly beneath it. Removing this force will cause the compression spring 22 to expand and the actuator will thus resume its standby configuration.

5

Another feature of the preferred embodiment is a switch access hole 42 provided in the collar 14 for enabling a user 4 to access the flashlight press-button switch 2 with a finger. When the handle is attached to the 10 flashlight such that the switch access hole 42 is coincident with the press-button switch 2, a user can directly press the flashlight press-button switch 2 with a finger through the switch access hole 42. The actuator provided for in the handle 10 is effectively in-operable 15 whilst using this feature.

It will be appreciated by a person skilled in the art that a number of variations to the foregoing embodiment are permissible that fall within the scope of 20 the present invention. For example, the actuator need not be fitted within the handle body 20 and could alternatively be fitted externally to a solid handle body.

Alternative actuators can be substituted for the 25 compression spring actuator detailed in the preferred embodiment for actuating a press-button switch including tension spring and gas chamber equivalents. Alternative actuators can be substituted for actuating other switch types including sliding, lever, tilt or rotary switches.

30

Some torches have rechargeable batteries with external contacts located in the region of the button. A battery charger for charging the batteries receives the contacts and charges the battery. In one embodiment the 35 collar of the handle can be modified to incorporate such contacts.

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These and other modifications will be apparent to persons skilled in the art and should be considered as falling within the scope of the invention described herein.

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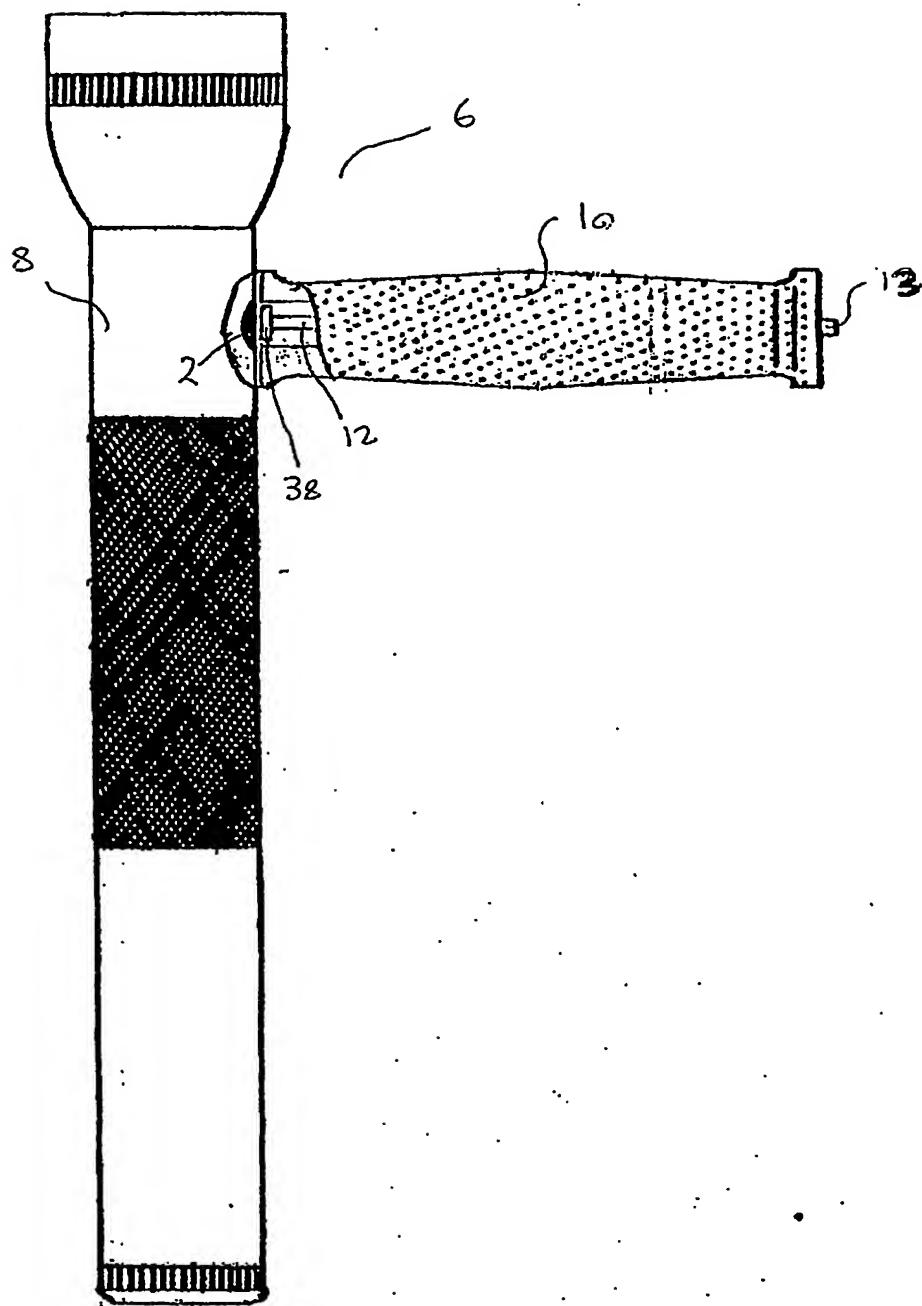


FIGURE 1

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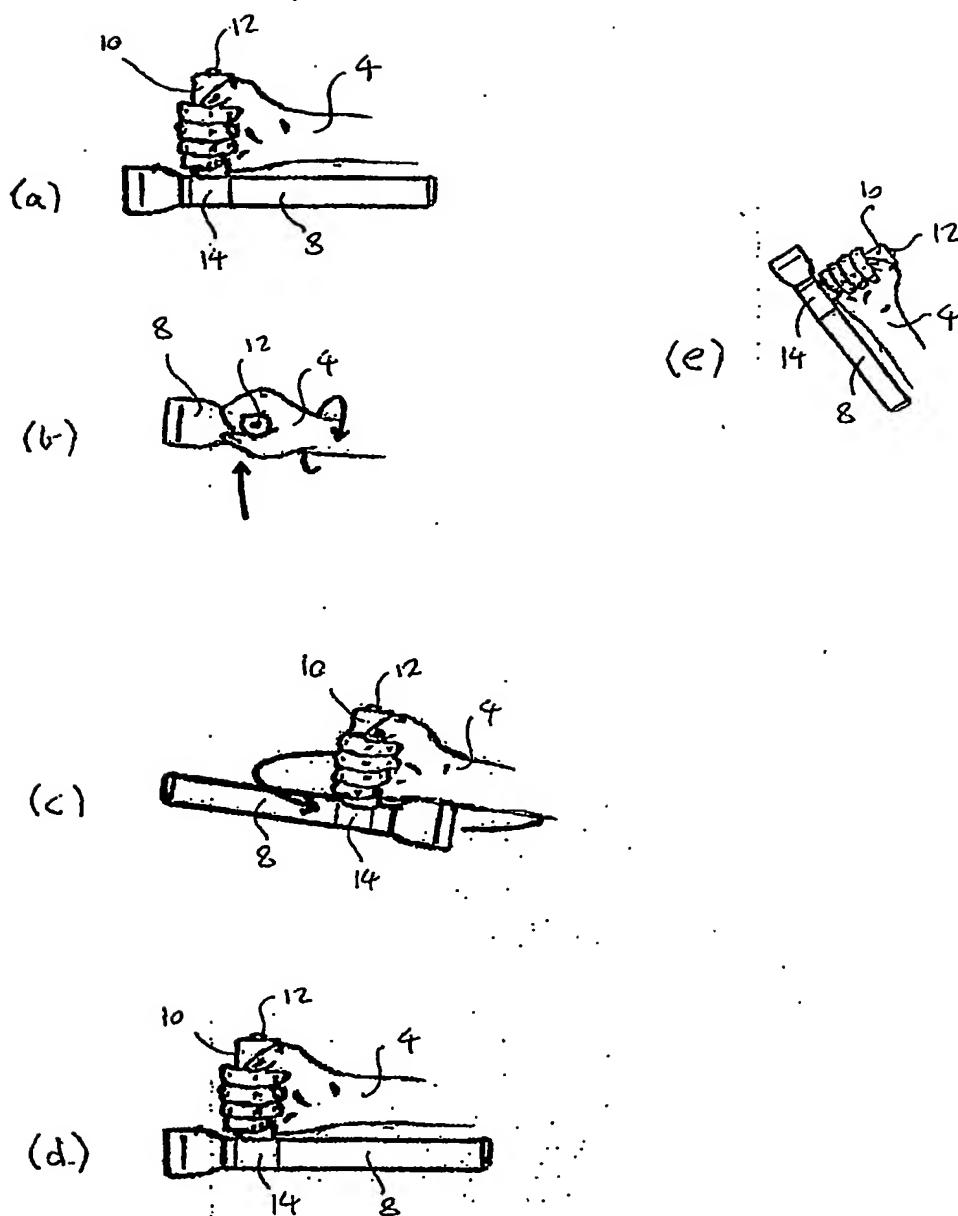


FIGURE 2

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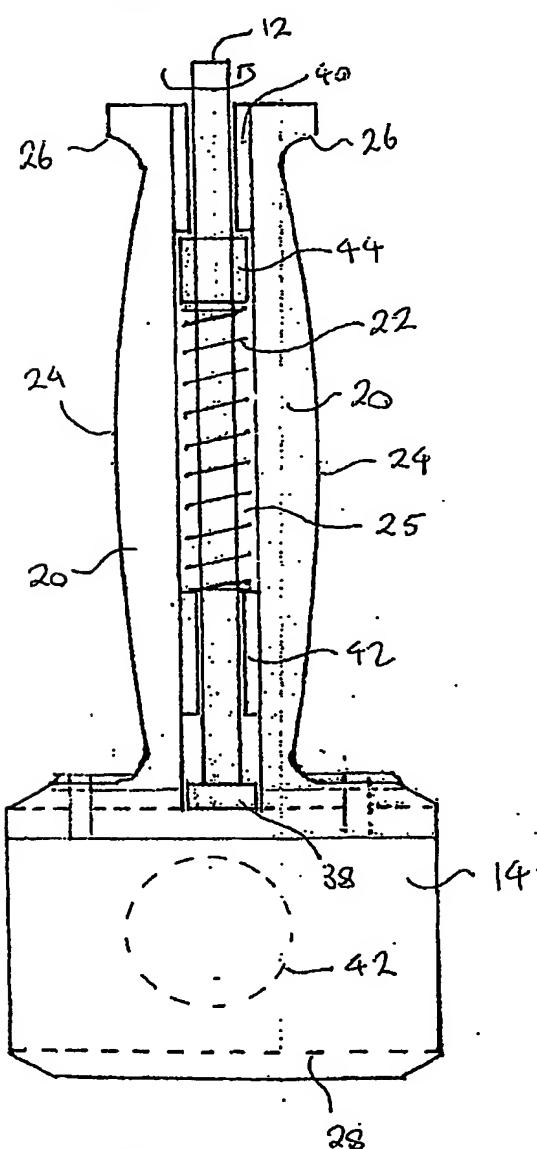
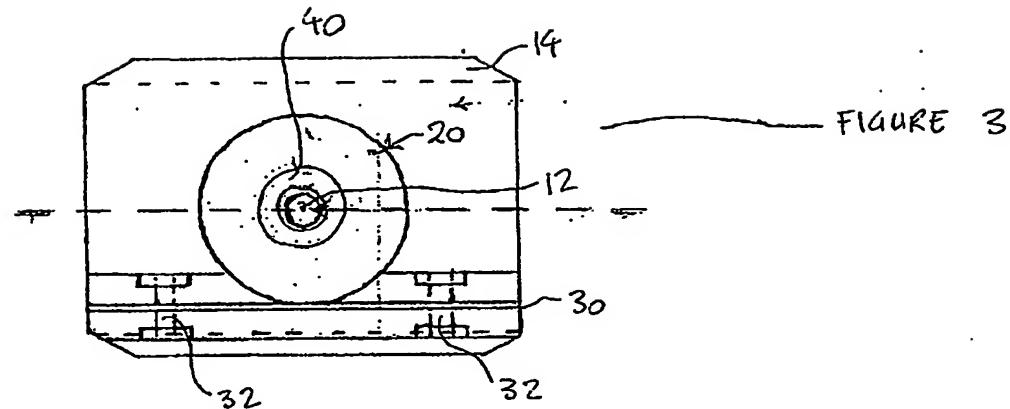


FIGURE 4

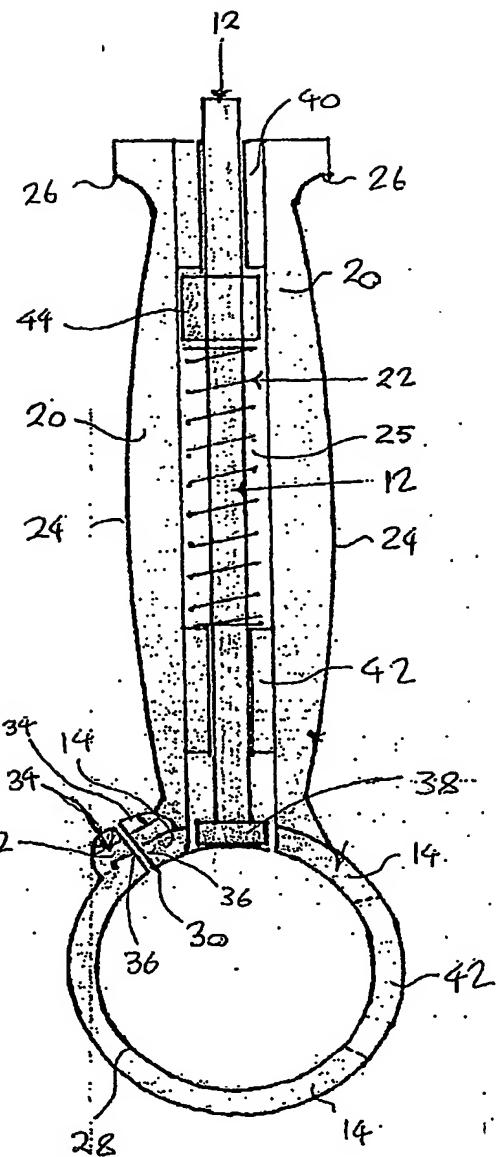


FIGURE 5

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